

UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF MICHIGAN  
SOUTHERN DIVISION

GUARDIAN INDUSTRIES CORP, ET AL,

PLAINTIFFS,

CIVIL ACTION NO. 03-73722

v.

HONORABLE ARTHUR J. TARNOV  
UNITED STATES DISTRICT JUDGE

AFG INDUSTRIES, INC.,

DEFENDANT.

MAGISTRATE JUDGE  
R. STEVEN WHALEN

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**CLAIMS INTERPRETATION**

Guardian Industries and Centre Luxembourgeois De Recherches Pour Le Verre et la Ceramique S.A. (C.R.V.C.), a Michigan glass manufacturer and a Luxembourg corporation respectively, were assigned US Patent Nos. 6,576,349 ("349"),<sup>1</sup> 6,602,608 ("608")<sup>2</sup> and 6,686,050 ("050")<sup>3</sup> in 2003- 2004. The patents related to low-Emissivity glass that reflects infrared radiation while allowing transmission of visible light. The purpose of the patents is to allow people to see through windows while reducing heat (by reflection) that would otherwise be emitted by the glass by its absorption of infrared radiation (IR) energy. The glass and coatings applied to the glass allow for better temperature control in homes, offices, and cars in winter and summer. The coatings are very thin, applied to the glass, placed on top of each other to create a "layer stack." They are made to look the same regardless of the angle at which it is viewed.

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<sup>1</sup>The '349 patent is entitled, "Heat Treatable Low-E Coated Articles and Methods of Making Same." This was the first patent to teach oxidation gradation in the coating layers adjacent to the reflective (e.g. silver) layers on the glass which improves adhesion between layers and durability during heat treatment. .

<sup>2</sup>The '608 patent is entitled, "Coated Article with Improved Barrier Layer Structure and Method fo Making the Same." This is the first to teach the use of silicon rich silicon nitride layers that provide for reduced haze in the glass coating and better adhesion of the coating layer structure to the glass substrate.

<sup>3</sup>The '050 patent is entitled, "Heat Treatable Low-E Coated Articles and Methods of Making Same." This is the first to teach the use of a thin metal or thin metal nitride protective layer to improve durability of the coating while also preserving transparency.

Plaintiffs and AFG (Defendant) are direct competitors in the market.

Plaintiffs, filed suit in September 2003, against Defendant AFG Industries alleging infringement of two patents on “advanced heat treatable low-Emissivity glass.” Plaintiff later amended the complaint and added a third claim of patent infringement. Plaintiff alleges that AFG has directly infringed on the ‘359, ‘608, and ‘050 patents by making, offering to sell, selling or using within the US, articles covered by one or more of the claims of Plaintiffs’ three patents.

On May 8, 2006, this court held a claim interpretation hearing in accordance with *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996), to construe the disputed terms of the patents.<sup>4</sup> The court read the briefs, heard both sides’ claims interpretations and took the matter under advisement.

### **Legal Standards**

Patent infringement analysis entails two steps: first, determining the meaning and scope of the patent claims asserted to be infringed; and second, comparing the properly construed claims to the device accused of infringing. *Moore U.S.A., Inc. v. Standard Register Co.*, 229 F.3d 1091, 1105 (Fed. Cir. 2000). This Order only addresses the first step of the analysis, determining the scope of the patent claims.

The goal of both the *Markman* hearing is to allow the court to complete this first step, *i.e.* determine the meaning and scope of the patent claims that the plaintiff asserts have been infringed. The court is to construe a disputed claim by using an objective test of what one of ordinary skill in the art at the time of the invention would have understood the claim to mean. *Philips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005)(*en banc*).

That starting point is based on the well-settled understanding that inventors are typically persons skilled in the field of the invention and that patents are addressed to and intended to be read by others of skill in the pertinent art.

*Id.* (citing *Verve, LLC v. Crane Cams, Inc.*, 311 F.3d 1116, 1119 (Fed. Cir. 2002) (patent documents are meant to be "a concise statement for persons in the field") and *In re Nelson*, 47 C.C.P.A. 1031, 280 F.2d 172, 181, 1960 Dec. Comm'r Pat. 369 (CCPA 1960). The Federal

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<sup>4</sup>This Court did not hear arguments on the pending motions for summary judgment at this time.

Circuit Court of Appeals in *Multiform Desiccants, Inc. v. Medzam, Ltd.* stated,

It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed. Such person is deemed to read the words used in the patent documents with an understanding of their meaning in the field, and to have knowledge of any special meaning and usage in the field. The inventor's words that are used to describe the invention--the inventor's lexicography--must be understood and interpreted by the court as they would be understood and interpreted by a person in that field of technology. Thus the court starts the decision making process by reviewing the same resources as would that person, viz., the patent specification and the prosecution history.

133 F.3d 1473, 1477 (Fed. Cir. 1998).

Occasionally, the interpreting court can give meaning as understood by a person skilled in the art to the disputed claim terms merely from the claim language itself by applying the widely accepted meaning of commonly understood words. *Philips*, 415 F.3d at 1313. More often though, the meaning of a claim term as understood by a person skilled in the art is not “readily apparent.” *Id.* at 1314. At this point, the district court should turn to “the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” *Id.* The single best guide to the meaning of a disputed term is the specification in the patent. *Id.* at 1315 (citations omitted).

Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.

*Renishaw, PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998) (citations omitted).

### **General Information Regarding the Patents**

The ‘349 patent specifications disclose that the invention is related to “heat treatable (low-E) coated articles, and methods of making the same.” The ‘349 patent also relates to heat treated coated articles that comprise, *inter alia*, an oxidation graded-layer of NiCrOx. According to the specifications, the oxidation graded layer allows for high transmission of visible light,

heat-treatability, a better durability as well as improved adhesion between layers. Other layers in the ‘349 patent allow for low-Emissivity, mechanical and chemical durability, and the ability to adhere to other layers. The layer coatings are also designed to have approximately the same color when viewed over a wide range of viewing angles. According to the patent, the uses for such a patent include creating vehicle windshields, insulating glass units, and other suitable applications.

The ‘050 patent is a divisional patent of the ‘349 patent, but relates to coated articles that comprise, *inter alia*, a layer of silicon-rich silicon nitride, which reduces “haze.” The ‘050 patent specifications disclose that the invention is directed to “heat treatable (low-E) coated articles, and methods of making the same” used in the same instances as the ‘349 patent. Here in order to achieve haze reduction and better adhesion of the coating layer structure to the glass substrate, the coating must include one or more “Si-rich silicon nitride layers.”

The ‘608 patent relates to heat treated coated articles comprising, *inter alia*, a metal or metal nitride layer located between a silver-inclusive layer and a NiCrO<sub>x</sub> layer, which allows high transmission of visible light and durability. The ‘608 specifications disclose that the invention is directed to “a coated article including a metal or metal nitride layer provided between an IR reflecting layer and an oxide layer, and a method of making the same.” Like the other patents, this patent can be used in architectural windows, automotive windows, and other suitable applications.

#### **Guardian’s Position**

Guardian argues that there are seven relevant claim terms in dispute. Guardian’s interpretations are listed below.

**Heated Treated Coated Article:** a coated article that has been heated to a temperature for a sufficient period of time to enable thermal tempering, bending or heat strengthening of the articles.

**Layer:** a region of material having a thickness and the composition of which is chosen to provide desired properties.

**Oxidation Graded:** having a change in the relative oxygen content in a region such that one portion contain more oxygen than another portion.

**Progressively More Oxidized:** having a trend of increased relative oxygen content.

**More Oxidized at a Location Further From the Layer Comprising Ag Than at a Location Closer to the Layer Comprising Ag:** these precise words do not appear in the asserted claims of the patents-in-suit, and therefore, they do not require interpretation.

**Metal or Metal Nitride Contact Layer:** metal or metal alloy, contact lawyer means a layer contacting another layer, metal nitride is a material including both metal and nitrogen.

**More Metallic:** having more relative metal content in a region compared to reactive non-metals such as oxygen or nitrogen.

### **AFG's Claim Interpretations**

AFG groups the terms in dispute into four categories: (1) coated article claim elements; 2) layer claim elements; (3) oxidation graded claim elements; and (4) nitride claim elements.

**Coated Article:** all of the coated article definitions (“heat treated coated article,” “coated article,” and “after being heat treated (HT) said coated article”) should be interpreted as: “an article which has been coated” with either: a) “and has been heated to a temperature sufficient to enable thermal tempering, bending, or heat strengthening”; or b) “with a heat treatable coating.”

**Layer:** “a thickness of material having a function and chemical composition bounded on each side by an interface with another thickness of material having a different function and/or chemical composition.”

**Oxidation Graded:** all of the oxidation graded claims (“oxidation graded,” “is more oxidized at a location further from the [first] layer comprising Ag than at a location closer to the [first] layer comprising Ag,” “is more metallic at a location closer to the silver inclusive layer than at another location further from the silver inclusive layer,” and “is more metallic at a location closer to the metal or metal nitride contact layer than at another location further from the metal or metal nitride contact layer”) should be interpreted as, “a layer that is progressively more or less oxidized through its thickness” with the appropriate variations in language used in the different claims.

**Nitride layer:** all of the nitride layer (“nitride layer,” “comprises silicon nitride,” “layers which comprises a nitride,” and “layer comprises Si-rich  $Si_xN_y$  where x/y is from .76 to 1.5”) is “a layer containing a silicon nitride compound, and not containing oxygen.”

### **ANALYSIS**

#### **Coated Article**

With one minor exception, discussed later, both parties agree that the term “heat treated coated article” should be interpreted as “a coated article that has been heated to a temperature for a sufficient period of time to enable thermal tempering, bending or heat strengthening of the articles.”

The parties major point of contention is how to interpret the claim term “coated article” by itself. AFG argues that the unmodified term “coated article” when used alone should be interpreted as an article “coated with a heat treatable coating.” Guardian argues that AFG is impermissibly reading a limitation (“coated with a heat treatable coating”) into the claim term.

Only the ‘050 patent, claims 9-22 and 24 use the unmodified “coated article,” *i.e.* without any reference to the coated article being either heat treated or coated with a heat treatable coating. In contrast, claims 1-8 specifically refer to the coated article as “after being heat treated (HT).” Similarly, claim 23 also states the “[t]he coated article of claim 21, wherein the article is heat treated.”

AFG argues that the ‘050 patent term “coated article” must be interpreted consistently throughout the patents. The consistent definition, according to AFG, would be that the term “coated article” refers to articles that are either heat treated or have a heat treatable coating. AFG also points to the invention’s function to reduce haze and improve durability through heat treatment. “[T]his invention is to provide a heat treatable low-E coating (or layer system) which is mechanically and/or chemically durable before and after heat treatment, the coating system having a visible transmittance of at least about 70%.” ‘050, Col. 1 line 66 through Col. 2 line 4. Moreover, the specifications of the ‘050 patent describes the invention as relating to “heat treatable (low-E) coated articles.” ‘050, Col. 1, lines 9-10. AFG’s argues that their definition would support both the goals and description of the patents.

Guardian claims that no special interpretation is necessary for the claim term “coated article” and that the patent principle of claim differentiation should be employed.

The concept of claim differentiation . . . states that claims should be presumed to cover different inventions. This means that an interpretation of a claim should be avoided if it would make the claim read like another one. Claim differentiation is a guide, not a rigid rule. If a claim will bear only one interpretation, similarity will have to be tolerated.

*Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir. 1991) *citing Autogiro Co. of*

*America v. United States*, 384 F.2d 391, 404 (1967).

The case for claim differentiation is supported by *Liebel-Flarsheim Co. v. Madrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004). In that case, the Federal Circuit found that the patent principle of claim differentiation gave further support to the Plaintiff's interpretation where "the presence of a dependent claim that adds a particular limitation raises a presumption that the limitation is not found in the independent claim." *Id.* (citations omitted).

Guardian argues that by not reading the limitation of "heat treated" or "heat treatable coating" into the term in the '050 patent, the court would be adhering to the claim differentiation principle that ordinarily, different words in a patent have different meanings. Here the same type of relationship is present. For example, claim 21 is an independent claim without the "heat treatable coating" limitation. The dependent claim 23, then adds the particular limitation of "wherein the coated article is heat treated." Moreover, independent claim 9 and all of its dependent claims 10-17 never limit the term "coated article" as either being heat treated or being coated with a heat treatable coating.

AFG agrees that claim differentiation should apply to the term "heat treated" since dependent claim 23 only differs from claim 21 in that it is "heat treated." However, AFG argues that this principle should not apply to the limitation it proposes to the term "coated article," *i.e.* "which has been coated with a heat treatable coating." The reason is that the limitation of claim 23 ("wherein the coated article is heat treated") relates to something that has already been heat treated, not whether the coated article can be heat treated or has a heat treatable coating. AFG argues that if claim 21 were not coated "with a heat treatable coating," then claim 23 would make little sense, since claim 23 is merely a coated article that has been heat treated. If the coated article were not coated with a heat treatable coating, then it could not have been heat treated in claim 23. Thus, according to AFG, the definition of "coated article" necessarily includes the limitation "which has been coated with a heat treatable coating."

If the court is to read the term "coated article" consistently and in line with the invention's goals and functions, the court agrees that the "coated article" must be able to withstand heat treatment. Since the generic "coated article" could be modified by being heat treated in claim 23, the "coated article" interpretation should include that it can be heat treated. However, the claim's terms and the specifications never discuss whether it is the coating that

causes the article to be able to withstand heat treatment. Thus, this court will not read this particular limitation, “which has been coated with a heat treatable coating,” into the claim. Instead, the court adopts the interpretation: a “coated article” is an “article that is coated and is heat treatable.”

In their briefs, the parties present a subsidiary question of whether the definition of “heat treated coated article” should include the phrase “for a sufficient period of time” in its definition, “heating an article to a temperature for a sufficient period of time to enabling thermal tempering, bending, or heat strengthening.” It is apparent from the face of the words that heat treatment will take time. If the purpose of heat treatment is to allow for certain properties to come out (thermal tempering, bending or heat strengthening), it is clear that the heat treatment will require certain amount of time. Moreover, in the examples for both the ‘349 and ‘050 patents it states explicitly that the heat treatment definition includes heating a coated article to a temperature of at least 1100 degrees F “for a sufficient period to enable tempering.” ‘349 Col. 23, lines 39-40 and ‘050 Col. 20, lines 16-17. The phrase “for a sufficient period of time” is properly included in the claim interpretation.

### **Layer**

The two parties proposed interpretations of the term “layer” contain a number of differences. The first difference lies in whether the court should adopt Guardian’s “the region of material having a thickness” interpretation or AFG’s proposed “thickness of material” interpretation. Both sides agree that a layer has a “thickness” and is made with a certain “material,” the difference lies in whether the word “region” should be incorporated into the interpretation.

This court was unable to find any mention of the term “region” in the patents’ claims or specifications” Instead, when describing “layers” the patents’ claims, tables, and specifications all refer to the type of material used in the specific “layer” and its “thickness.” For example, the ‘349 specifications discuss “exemplary preferred thickness and example materials for the respective layers on the glass substrate.” ‘349, Col. 7, lines 65-66. The patent also provides a chart that outlines the “preferred range,” the “more preferred range” and “example” of thickness for each material. ‘349, Col. 8, lines 1-18.

In a case involving patents related to the same type of glass, the Federal District Court

defined “layer” as a “thickness of material of substantially uniform chemical composition....” *AFG v. Cardinal*, 239 F.2d 1239, 1250 (Fed Cir. 2001). Although these are different patents at issues, this court believes that the Federal Appeals Court’s decision is instructive on how a person skilled in the art of these types of inventions would interpret the term “layer.”

As a result of the claims’ terms, the specifications, and the guidance of the Federal Court’s decision in the 2001 *AFG* case, this court refuses to adopt the “region of material” interpretation proposed by Guardian. Instead, the court will adopt the “thickness of material” interpretation.

Another point of contention, is whether the “layer” interpretation should include AFG’s proposed “bounded on each side by an interface with another thickness of material having a different function and/or chemical composition.” Guardian’s proposed interpretation says nothing about a layer’s spatial relationship to other layers.

Guardian argues that AFG’s interpretation is faulty for a numerous reasons, including that AFG’s interpretation would cause an absurd situation. In a Southern District of New York case, the patent interpretation principle of construing claim language in a manner that causes the claim to make sense in the context of the patent. *Leighton Techs. LLC v. Oberthur Card Sys*, S.A., 358 F.Supp.2d 361, 366. Guardian argues that the “bounded on each side” language would cause just such an absurd situation, *i.e.* the coating would continue *ad infinitum* since each layer is bounded by another layer on the other side.

Guardian also points out that AFG’s position on the interpretation of the term “layer” has changed since the Federal Circuit opinion in 2001. *AFG v. Cardinal*, 239 F.2d 1239 (Fed Cir. 2001). In that particular case, AFG argued against defendant Cardinal’s proposed definition of “a thickness of material of uniform chemical composition bounded by a material of different chemical composition” and instead advocated for the proposed definition of “a thickness of material of uniform composition.” *Id.* at 1250. The Federal Circuit noted that the patent in question did not limit the term “layer” to a deposit bounded by a material of a different chemical composition, thus declining to include such a limitation in the construction of the term “layer.” *Id.*

Similarly, the specification of the patents in this case do not limit the term “layer” to a deposit bounded on each side by an interface with another thickness of material having a

different function and/or chemical composition. At times in the patents' claims and specifications, the term layer is mentioned in connection with its physical relationship to other layers. For example, the silver and NiCrOx layers are said to contact each other in certain patent specifications. In patent '349 claims, the infrared reflecting layer is said to be "contacting and sandwiched between first and second layers, said second layer comprising an oxide of NiCr." '349, Col. 23, lines 52-54. However, the vast majority of both the claims and specifications do not place physical limitations on the term "layer." Thus, the Court refuses to adopt this aspect of AFG's proposed interpretation.

Another difference between the parties proposed "layer" interpretation is Guardian's "the composition of which" versus AFG's "chemical composition." The Federal Circuit in the 2001 *AFG* case included within its "layer" interpretation "of material of substantially uniform chemical composition." *Id.* at 1250. The court came to this conclusion discussing whether the term "layer" should include in its interpretation the word "uniform":

[F]ocusing on the chemical uniformity of a deposit, rather than its optical properties, constitutes a departure from the disclosures and teachings of the patent. Nowhere does the patent refer to chemical "uniformity" as a characteristic of a layer... we do not think that the incorporation of trace amounts of silver or zinc oxide into titanium deposit would disqualify that deposit from constituting a layer. Accordingly, we hold that the chemical composition of a layer must only be "substantially uniform," rather than uniform.

*Id.* The court concluded that consistent with the specification that the term layer should be interpreted as: "a thickness of material of substantially uniform chemical composition, but excluding interlayers having a thickness not to substantially affect the optical properties of the coating." *Id.*

Even though the 2001 opinion left open the question of whether sequential applications of a single material produce a layer or multiple layers, that question was later answered in the same case in a 2004 decision by the Federal Circuit. *AFG, Industries, Inc. v. Carinal IG Company, Inc.*, 375 F.2d 1367 (Fed. Cir. 2004). The court determined that the term "layer" was not affected by the method of creation, *i.e.* whether it was deposited in a single sputtering operation or in multiple operations. *Id.* at 1373. The court stated that the only way the multiple

depositions would only be relevant was if the multiple depositions affected the structure and optical properties. *Id.* Thus, the court concluded that the “unitary structure of the same material that constitutes a ‘layer’ does not become multiple layers because the manufacturer decided to deposit it in multiple passes rather than in a single pass.” *Id.*

Guardian’s interpretation of “the composition of which is chosen to provide desired properties” comes closer to what this court believes is the proper interpretation. AFG’s interpretation separates “function” and “chemical composition,” whereas Guardian’s interpretation meaningfully connects the two in the spirit of the patents’ intent. The patent makes clear that each chemical composition is chosen for certain functions that it gives the glass and coating. AFG’s interpretation simply acknowledges that each layer is comprised of a certain chemical composition and each layer also has a function without saying that one is the reason for the other.

Similar to the *AFG* (2004) case, this court also believes the when determining what constitutes a layer the focus should be on the layer’s function as opposed to its method of production. Thus, the sputtering of multiple depositions would not be cause to categorize something as more than a layer unless the sputterings affected a different function. This court is not using the prior cases definitions to define the term “layer” in these patents, but the court does believe that the opinions do give this court a better idea of how a person skilled in the art may interpret the patents’ claims.

**Oxidation Graded:**

The difference between the two competing interpretations of the term “oxidation graded” is whether the oxidation should be considered as “progressively more or less oxidized through its thickness” (AFG) or as “having a change in the relative oxygen content in a region such that one portion contains more oxygen than another” (Guardian).

The patents’ specifications and claims state that the oxidation grade runs through the thickness of the layer, so that it touches one layer say an IR reflecting layer with one certain degree of oxidation and touches upon another layer with another layer with either less or more oxidation. For example in ‘349 Patent, Col. 25, lines 38-40 claims state:

wherein at least said second contact layer is oxidation graded and becomes progressively more oxidized through its thickness proceeding further from said

infrared reflecting layer; and

The '050 patent specifications similarly states:

wherein at least said second layer comprising NiCroOx is oxidation graded so that a first portion of said second layer close to said infrared layer is less oxidized than a second portion of said second layer that is further from said infrared (IR) reflecting layer;

The phrase “the two contact layers on either side of the Ag layer are progressively less oxidized through their respective thickness as they near the Ag layer” can be found in both the '349 and '050 patents. '349, Col. 10, lines 16-17; '050, Col. 10, 35-37; . The '349 patent also defines oxidation graded as “the degree of oxidation in the contact layer is graded or changes through the thickness of the layer.” Col. 2, lines 7-9. The figures submitted in the patents further support this definition.

What is most convincing to this court that the definition should include the word “progressively” is the common sense understanding of the word “graded.” AFG’s proposed interpretation would mean that the oxidation levels in one end of the thickness are the highest, and the farther you go from that end the less oxidized the material becomes, until you reach the other end of the thickness which has the least amount of oxidation. This court may give meaning to disputed claim terms as understood by a person skilled in the art merely from the claim language itself by applying the widely accepted meaning of commonly understood words. *Philips*. 415 F.3d at 1313. The court adopts as its interpretation for the claim term oxidation graded, “a layer that is progressively more or less oxidized through its thickness.”

**Nitride:**

With regard to the disputed term “nitride,” the difference between the parties proposed interpretations is whether the interpretation should include the limitation “not containing oxygen.” The claims and the specifications say nothing about requiring the nitride or silicon-nitride layer to be oxygen free nor do they state that they contain oxygen. The question is whether someone skilled in the art of “stacking” would understand that the term nitride or silicon-nitride layer to possibly allow for oxygen to be present.

The patents’ claims and specifications often refer to the silicon-nitride layer by its

periodic formula designation,  $\text{Si}_x\text{N}_y$ . According to AFG, if this were meant to include any degree of oxygen the term would be referred to as a silicon oxynitride and its equation  $\text{Si}_x\text{O}_y\text{N}_z$ . The term “silicon oxynitride” is used separately in specifications for patent ‘349 Col. 7, lines 24-35, which states:

Fifth dielectric layer may be of or include tin oxide in certain embodiments of the invention. However, other dielectric materials may be used for layer 23 including but not limited to silicon nitride, titanium dioxide, niobium oxide, silicon oxynitride, zinc oxide or the like. Protective overcoat dielectric layer 25 is provided at least for durability purposes, and may be of or include silicon nitride (e.g.  $\text{Si}_3\text{N}_4$ ) in certain embodiments of this invention. However, other dielectric materials may be instead used for layer 25, including but not limited to titanium dioxide, silicon oxynitride, tin oxide, zinc oxide, niobium oxide, SiZRN, or the like.

In this instance, the two substances are treated as two separate substances. This supports AFG’s proposed definition which specifically states that the layer compound cannot include oxygen.

Conversely, the ‘608 patent’s claims specifically states that, “[t]he coated article of claim 1, where in the contact layer is substantially free of oxygen.” Col. 8, lines 34-35. In this case, the patent delineates when the layer is to be substantially, and even still not completely, free of oxygen. Nowhere else are these words uttered in the claim specifications. This cuts in favor of Guardian’s interpretation since the patent would claim that the nitride layer was free of oxygen.

What steers this court’s decision is the patents’ claims use of the word “comprise[s].” For example, the ‘050 patent claims describes the coating as containing “at least one dielectric layer comprises  $\text{Si}$ -rich  $\text{Si}_x\text{N}_y$  where  $x/y$  is from .76 to 1.5.” Col. 20, lines 49-50. The Federal Circuit refers to claim terms like “composed of” or “comprised of” as “transition phrases.” *AFG Industries, Inc. v. Asahi Glass Company, LTD.*, 239 F.3d 1239, 1244-45 (Fed. Cir. 2001). The Federal Circuit “has consistently held that the word ‘comprising’ is an open transition phrase. In contrast, ‘closed’ transition phrases such as ‘consisting of’ are understood to exclude elements, steps or ingredients not specified in the claim.” *Id.* at 1245 (citations omitted).

The patents’ claims use the word “comprise” when describing the composition of the nitride or silicon nitride layers. ‘349, col. 26, lines 62-63; ‘349 col. 27, line 29; ‘349, col. 28,

lines 1, 11-13, 38-39; '050, col. 20, lines 49-50; '050, col. 21, lines 7-11, 35-36; '050, col. 22, lines 8-10, 25-26; '608, col. 7, lines 16-17, 34, 36. Moreover, the file history of the '349 and '050 patents state that the amount of oxygen which can diffuse from the nitride layer into the NiCr inclusive layer is reduced but not eliminated. Feb 14, 2003 Amendment p. 13. Therefore, Defendant's proposed interpretation which includes the phrase "not containing oxygen" will not be adopted. Plaintiffs' interpretation of the disputed term "nitride layer" is adopted.

**The Court's Interpretations**

For the reasons stated above,

**IT IS ORDERED THAT** the court adopts the following claim constructions:

**Heat Treated Coated Article:** a coated article that has been heated to a temperature for a sufficient period of time to enable thermal tempering, bending or heat strengthening of the articles.

**Coated Article:** an article that is coated and is heat treatable.

**Layer:** a thickness of material of either a substantially uniform chemical composition or oxidation graded chemical composition which is chosen to provide desired function(s).

**Oxidation Graded:** a layer that is progressively more or less oxidized through its thickness.

**Nitride Layer:** a layer comprised of a nitride compound.

**Silicon-Nitride Layer:** a layer comprised of a silicon-nitride compound.

**IT IS SO ORDERED.**

s/Arthur J. Tarnow  
 Arthur J. Tarnow  
 United States District Judge

Dated: June 2, 2006

I hereby certify that a copy of the foregoing document was served upon counsel of record on June 2, 2006, by electronic and/or ordinary mail.

s/Theresa E. Taylor  
Case Manager